

**WHAT IS CLAIMED IS:**

1. A method for obtaining a phage comprising an antibody or antibody fragment directed against an antigen associated with the surface of target cells in a heterogeneous cell population, comprising:

- (a) providing a library of antibodies or antibody fragments expressed on the surface of phage particles;
- (b) incubating the phage antibody library with said target cells under conditions that allow binding of phages to said target cells;
- (c) separating said target cells and phage particles associated therewith from phage particles not associated with said target cells; and
- (d) recovering the phage particles.

2. A method according to claim 1, wherein the separating of said target cells and phage particles associated therewith from phage particles not associated with the target cell is accomplished by flow cytometry.

3. A method according to claim 1, further comprising isolating antibodies or antibody fragments which associate with said target cells.

4. A method according to claim 1, wherein the target cells are labeled with fluorochrome-labeled antibodies.

5. A method according to claim 1, further comprising repeating steps (b) through (d).

6. A method according to claim 1, wherein the phage library comprises phage particles expressing Fab or single chain Fv (scFv) antibody fragments.

7. A cell-type specific phage antibody library produced according to the method of claim 1.

8. An antibody or antibody fragment obtained using the cell-type specific phage antibody library of claim 7.